Dialogue 1 Backgrounder:

Summary of Input Offered at Prior *Designing for Impact* Workshops

Technologies with Broad Impact

1. What criteria should be used to select technology focus areas?

Previous discourse offered the following general design principles in previous workshops:

1. Technologies should have broad application across multiple industries, and should address a national need. Technologies should leverage and enhance the regional supply chain.
2. The targeted Technological Readiness Level and Manufacturing Readiness Level should be 4-7; there should be a strong market potential, and 3-5 year time-to-market.
3. Technologies should be enabling, with transformational potential; they should be cross-cutting, widely adaptable, and driven by industry needs.
4. The technologies should have the potential to increase the number of domestic jobs, and should have an impact on energy and environmental sustainability.

2. What technology focus areas that meet these criteria that would you be willing to co-invest in?

The technology focus areas that were most frequently quoted were sensors; modeling/simulation software; composites; biomanufacturing, additive manufacturing, advanced materials (and composites); and nanotechnology. More generally, participants pointed out the need to address challenges faced by small and medium-sized companies, namely, scaling up and gaining access to modeling and simulation abilities, access to verification and validation processes and metrology.

3. What measures could demonstrate that Institute technology activities assist U.S. manufacturing?

To demonstrate that the institute technology programs assist U.S. manufacturing, participants recommended metrics on jobs created (re-shored or new), the number of startups including SMEs, partnerships in the institute, application of methods developed by the institutes by industry, the use of surveys, and the tracking of technologies infused into the marketplace (using a process similar to NASA's "mission use agreements").

4. What measures could assess the performance and impact of Institutes?

1. The number and quality of new or re-shored manufacturing jobs, global market share of exports, and trade balance.
2. Number of new partnerships and number of applications of the technology (touchpoints).
3. Infusion of technologies into the marketplace, the number of new startups in the region, and the size of the Institute's IP portfolio.
4. Retention rate for Institute members, participation of SMEs in the institute, and the amount of industry funding received.
5. The number of projects that develop from TRL5 to TRL8, and the number of licenses generated from the Institute.